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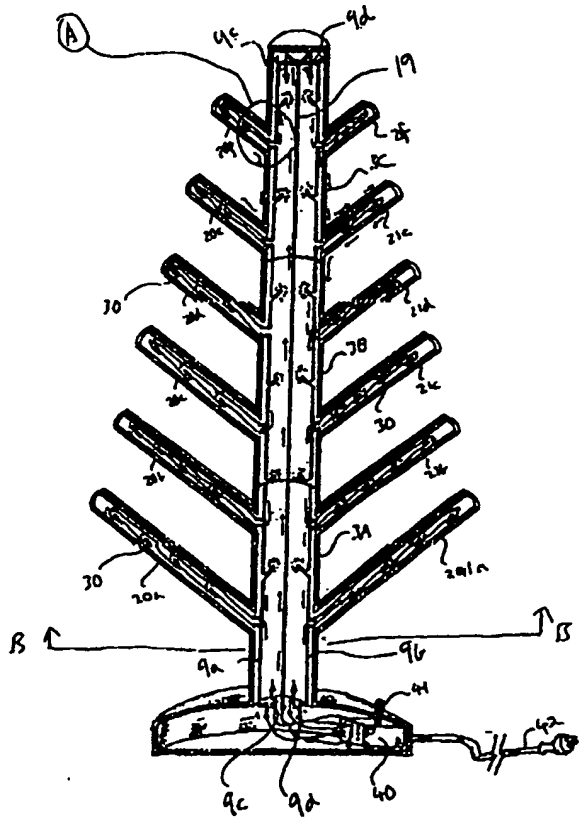
(54) Title: AN ARTIFICIAL TREE

(57) Abstract

An artifical tree is disclosed provided with a plurality of hollow transparent branches (20A-20F) in which lights (30) are disposed so that the branches of the tree are lit internally without external wiring.



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AN ARTIFICIAL TREE

This invention relates to ornaments and more particularly but not exclusively to an improved lighted christmas tree.

Conventional christmas trees that are commonly used can be for example ordinary fir trees, fabricated christmas trees made out of metal or dried tree branches or plastic christmas trees. Such christmas trees when used are decorated with christmas lights and decorations arranged around the branches of the tree in a manner to make the tree look attractive. It is a disadvantage that arrangement of christmas lights around a christmas tree can be a tiresome job and the possibility of accidental breaking of bulbs is great, so that failure of the christmas lights is common.

It is an object of the present invention to provide an artificial tree which alleviates this disadvantage.

According to the invention, there is provided an artificial tree having at least one supporting member and illumination means provided within the member, the member being light transmissible, at least in the region of the illumination means.

The described embodiment of the invention has a

transparent plastic trunk and branches wherein the lights are permanently positioned inside the trunk and branches of the christmas tree.

A preferred feature is to provide an improved lighted christmas tree in which a musical integrated circuit device is positioned inside the base.

It is an advantage of the described embodiment of the present invention that an improved lighted christmas tree is provided in which the arrangement of lights is well balanced giving good all-round illumination.

It is a further advantage of the described embodiment of the present invention that a lighted christmas tree is provided which can be more easily decorated since there is no outer light wiring around its branches.

Further preffered features of the invention are recited in dependent claims 2 to 12.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is a perspective view of a first embodiment of the invention;

Figure 2 is a cross-section view showing the electrical wiring construction inside the trunk,

branches and the position of the musical integrated circuit device inside the base of the embodiment of Figure 1.

Figure 3 is a cross-section view of the second embodiment of the invention.

Figure 4 is an expanded view of region A of Figure 3

Figure 5 is a cross-section view in the direction B-B of Figure 3.

Figure 6 illustrates a third embodiment of the invention

Figure 7 illustrates a fourth embodiment of the invention with figures 8-10 showing components of the embodiment of figure 7, figs 8b and 9b being views in the direction of arrows A,B of figures 8a and 9a respectively.

Referring now to the drawings in detail, there is shown a lighted christmas tree generally designated by reference numeral 1. The lighted christmas tree includes a base 2, a trunk 3 and branches with removable leaves 4. Said trunk and branches are made of hardened transparent plastic. The base 2, which may be any shape for example circular, rectangular or square, is provided with a top circular socket 5, in which an electrical outlet 6 is disposed. Said outlet 6 is connected to an outer plug 7 for connection to electrical AC or DC source. The base 2 is further provided with a musical integrated circuit device "M"

positioned internally thereof. The device "M" connected to the base electrical outlet and to an on/off switch "S" disposed at the outer circumferential surface portion of the base 2.

Adapted to be removably secured to said base 2 is the trunk 3. The trunk 3 is provided with electrical plug 8 integrally positioned at the lower end portion, to fit socket 5 of the base 2. Said electrical plug 8 is in turn connected to electrical wiring or metal strip connectors 9 longitudinally positioned inside the said transparent plastic trunk 3. A plurality of electrical bulbs 10 are connected from bottom to top along the length of the wiring 9. Said trunk 3 is further provided with a plurality of staggered branch connectors 11, at pre-determined intervals from the bottom up to the top of the trunk 3. The branch connectors 11 are each provided with an electrical outlet 12 which is connected to the longitudinal wiring 9 of the trunk 3. The christmas tree branches 4 are adapted to be removably fitted to said branch connectors 11. Each branch 4 is provided with an electrical plug 13 disposed at one end, which in turn is connected to a plurality of bulbs 16 arranged inside the said transparent branch 4 along its length. Each branch 4 is further provided with plurality of holes 14 in which the leaves 15 are removably secured.

In use, the trunk 3 is positioned on the base 2 such that the trunk plug 8 fits in the socket 5, 6. Then

the branches 4 are connected to the branch connectors 11 of the trunk, fitting the branch plugs 13 to the branch connectors 11 and then connecting all the leaves 15 to the branches 4. When the christmas tree 1 is assembled the outer plug 7 of the base is connected to an outside electrical AC or DC source, to light the bulbs inside the trunk and branches thereof. The switch "S" of the musical integrated circuit device "M" may then be put into the on position to provide music appropriate for the christmas season.

A second embodiment of the invention is shown in Figures 3 and 4. The second embodiment has many similarities with the first embodiment and so only the principal differences will be described.

In order to aid assembly, the hollow transparent plastic trunk 3 is divided into 3 sections 3A, 3B and 3C which slidably engage. Each section is provided with a plurality of hollow transparent plastic branches, the branches being arranged in 6 equi-angularly spaced sets of 6 branches 20A-F - 25A-F (see Figure 5) of which sets 20A-F and 21A-F are shown in Figure 3. Each set of branches has an electrical wire 9A-9F (Figure 5) associated with it. For example branch set 20 is associated with wire 9A and branch set 21 is associated with wire 9B which wires provide connections to each branch of the set. One such connection is shown in detail in Figure 4. The

branches 21 may be connected to the stem 3 by any conventional means and may for example be push fit, so that the sides of the branch engage the stem. Bulbs 30 are connected in series with connectors e.g. 9A via pins 32 provided in the side of the stem, the bulbs 30 and associated wiring being fed into the interior of the branch 21 when attached to the stem 3C. The six wires 9A-9F are connected to a common return 19 and all wires are connected to an electrical supply control box 40, having an on/off switch 41 and a power connection 42.

Further bulbs 31 are provided along the length of the stem 3A-3C in series with connectors 9A-9F.

In order to bridge the joints between segments 3A, 3B and 3C of the stem, sliding electrical contacts (not shown) between the connectors 19, 9A-9F may be provided.

Further embodiments of the invention illustrating different connection options are shown in Figures 6-10.

In Figure 6, the segments of the stem 50,52,54 are physically and mechanically connected by complementary plug and socket connectors 54,56. Wiring 58 connects the plug 56 and the socket 54 of the segments and lamps 60 may be connected in series with the wiring 58.

In figures 7-10, two types of segment 70,72 are alternately used. Segment 70 is illustrated in figures 8 and 8b and includes a hollow cylindrical body portion 80 provided with a plug 84 and a complementary socket 86 at respective ends. Six sets of live and neutral electrical wires 88 a-f are provided between the plug and socket, the sets corresponding to six branch connectors 82 a-f. At each end the wires are connected to slidably electrically engageable connectors formed from copper or aluminium provided at the tips of pairs of pins 95a-f projecting from plug 90 and at the base of corresponding slots 96a-f formed in socket 86.

In order to ensure correct registration of connected segments, a recess 94 is provided, for receiving a corresponding projection 97 and this may be formed to allow interlock of the segments by relative twisting of the segments after engagement.

Electrical connections from wiring 88 are provided to sockets 93 formed in branch connectors 82.

Segment 72 is illustrated in figures 9a and 9b. This segment is of the same construction as segment 70, having a similar body portion 100, plug 102, socket 104 and wiring 106 but does not have any branch connectors.

A branch 74 is shown in fig. 10 of similar construction to that described with reference to figure 2 and having plug 110 for engagement with branch connectors 82 and pins 104 for engagement with sockets 93.

In use the segments 70,72 are alternately connected via the complementary plugs and sockets to form the trunk of the tree. The trunk is placed in base 75, the branches are attached to the branch connectors and a cap member 73 placed on the free end of the trunk, to form the completed tree.

While the invention has been described with reference to transparent branches and trunk this is not to be construed as limitative. For example any single supporting member of the tree may be light transmissible and may be translucent rather than transparent. The supporting member need also be light transmissible only in the region or adjacent to the lamp(s).

CLAIMS

1. An artificial tree having at least one supporting member and illumination means provided within the member, the member being light transmissible, at least in the region of the illumination means.

2. A tree as claimed in Claim 1 wherein the member comprises at least one branch extending from a supporting trunk.

3. A tree as claimed in Claim 2 wherein the trunk is divided into a plurality of sections connectable together.

4. A tree as claimed in Claim 2 or Claim 3 wherein the trunk is transparent and the illumination means is disposed within the trunk.

5. A tree as claimed in any one of Claims 2 to 4 wherein said at least one branch is detachably connected to the trunk.

6. A tree as claimed in Claim 5 wherein said at least one branch is connected to the trunk by complementary electrical and mechanical connectors.

7. A tree as claimed in any one of claims 2 to 6

wherein the trunk is formed from a plurality of segments connectable together.

8. A tree as claimed in claim 7 wherein the segments are connected by complementary electrical and mechanical connectors.

9. A tree as claimed in any one of claims 2 to 8 wherein the at least one supporting member comprises a base detachably connectable to the trunk.

10. A tree as claimed in any one of the preceding claims wherein the illumination means comprises a plurality of strings of lamps illuminating respective portions of the tree.

11. A tree as claimed in any one of the preceding claims further comprising a sound producing device.

11. A tree as claimed in Claim 11 in which the sound producing device is disposed within a said supporting member.

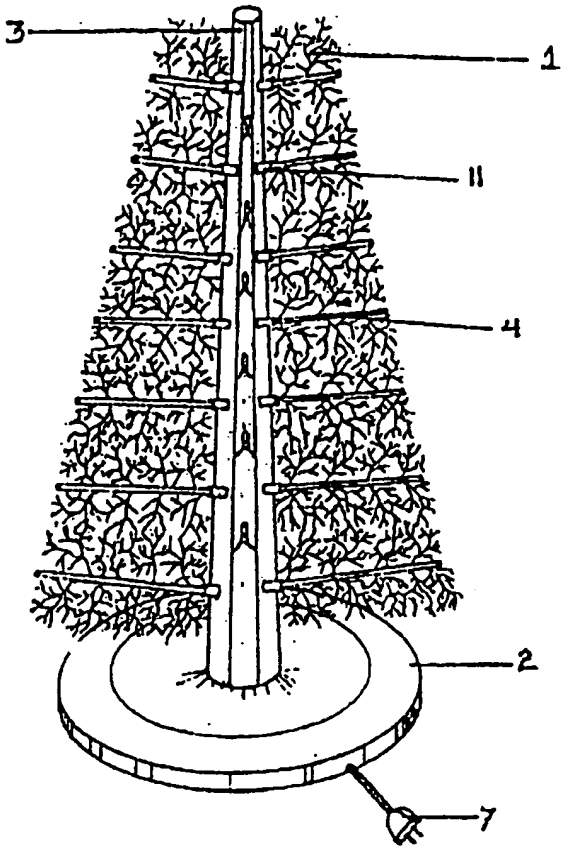


FIGURE 1

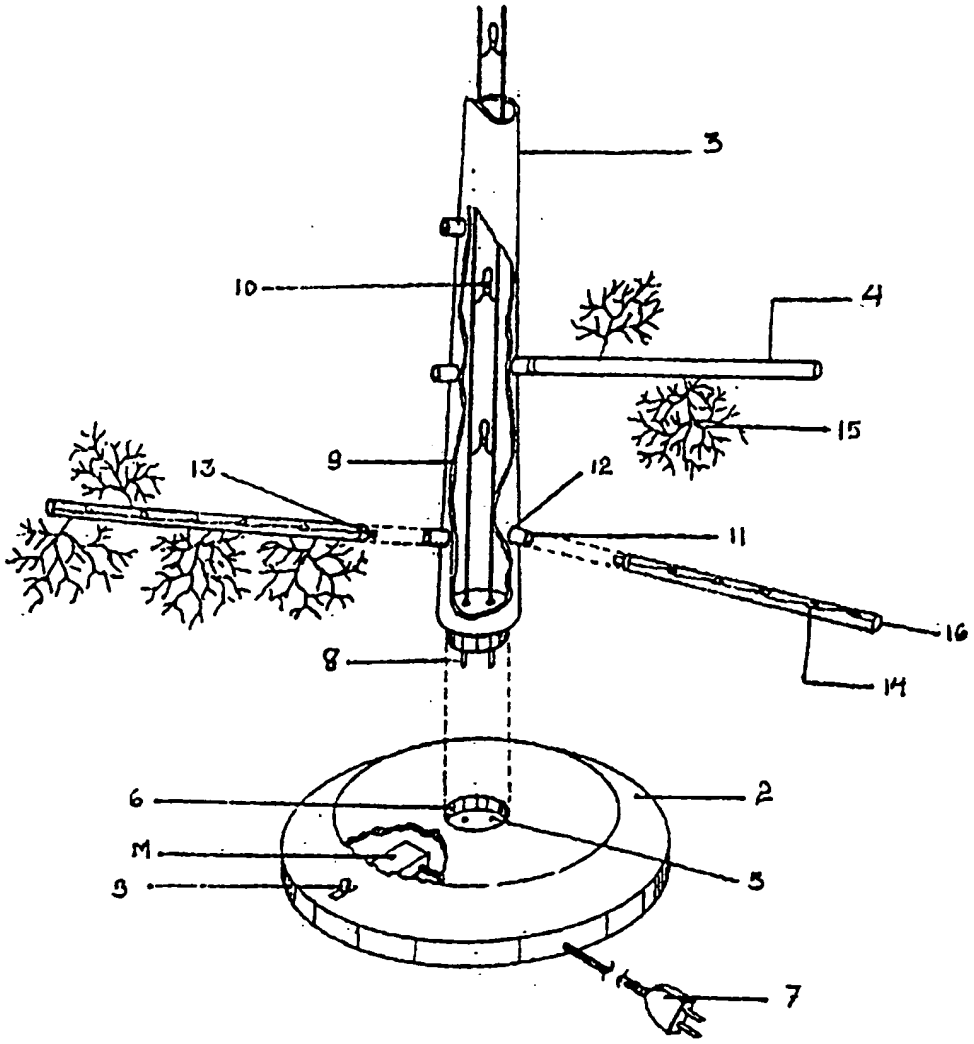
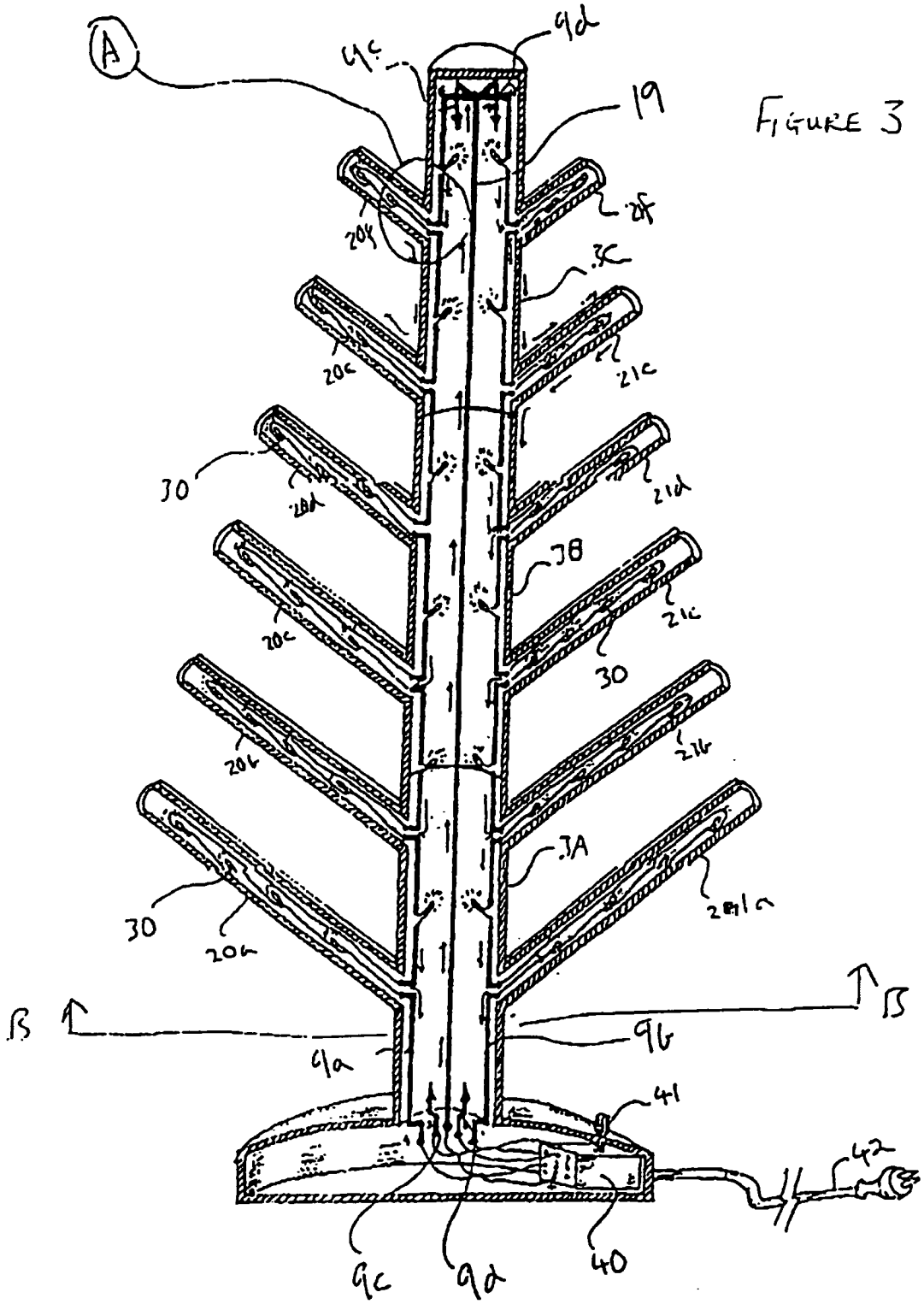


FIGURE 2


A
9c
9d
19
20f
3C
20c
21c
30
20d
21d
3B
20c
21c
30
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20a
21a
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B
9a
9b
41
42
9c
9d
40

FIGURE 3

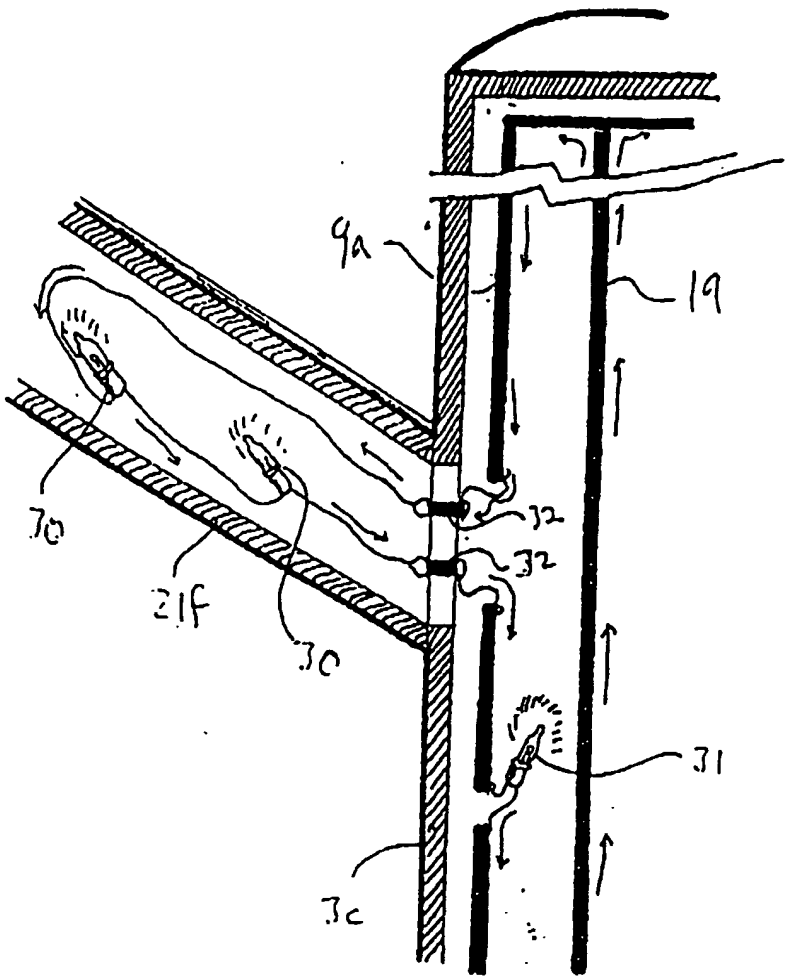

FIGURE 4

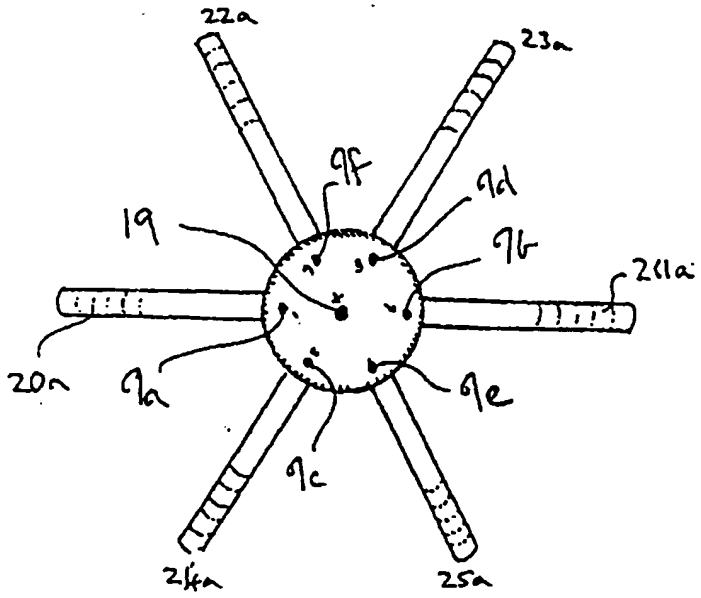

FIGURE 5

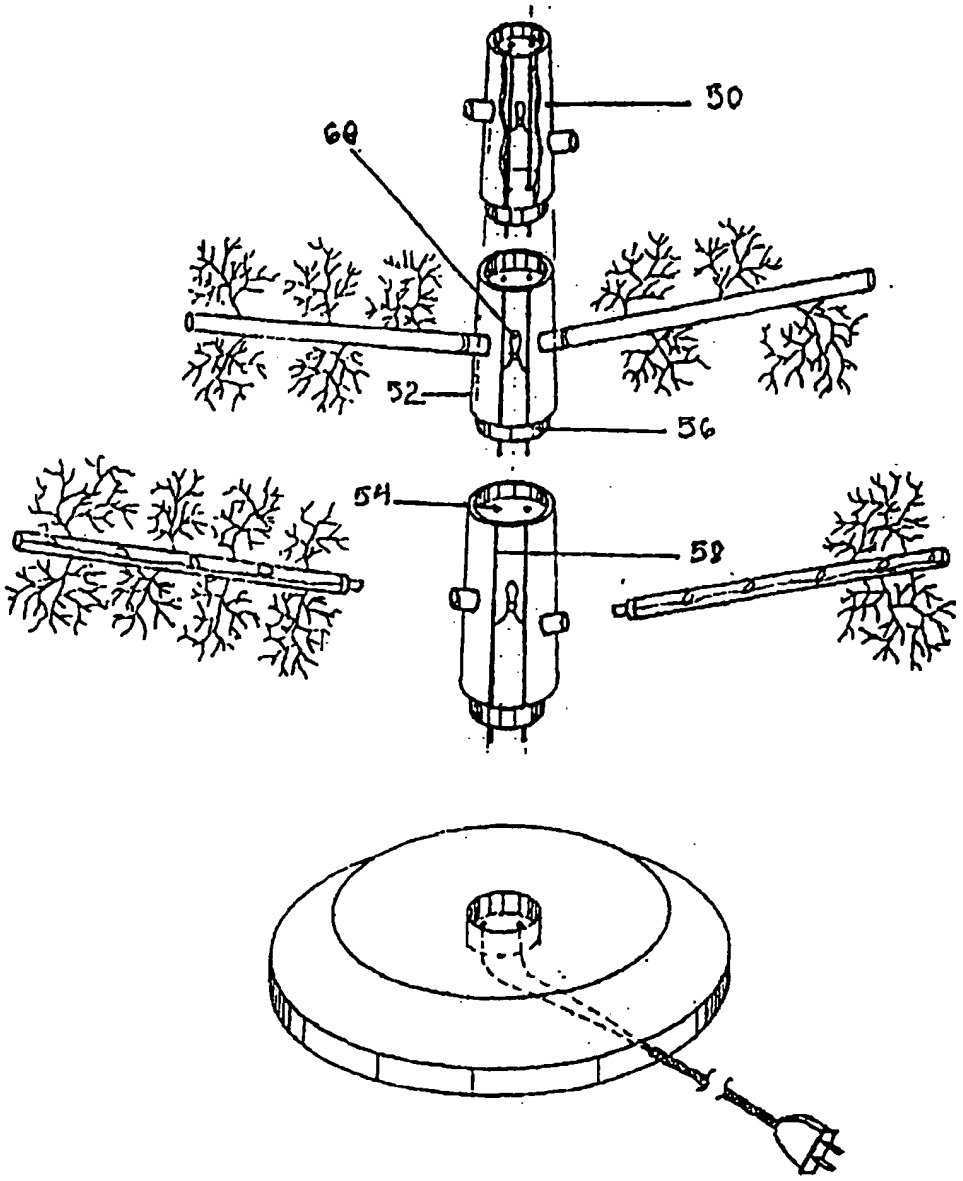

FIGURE 6.

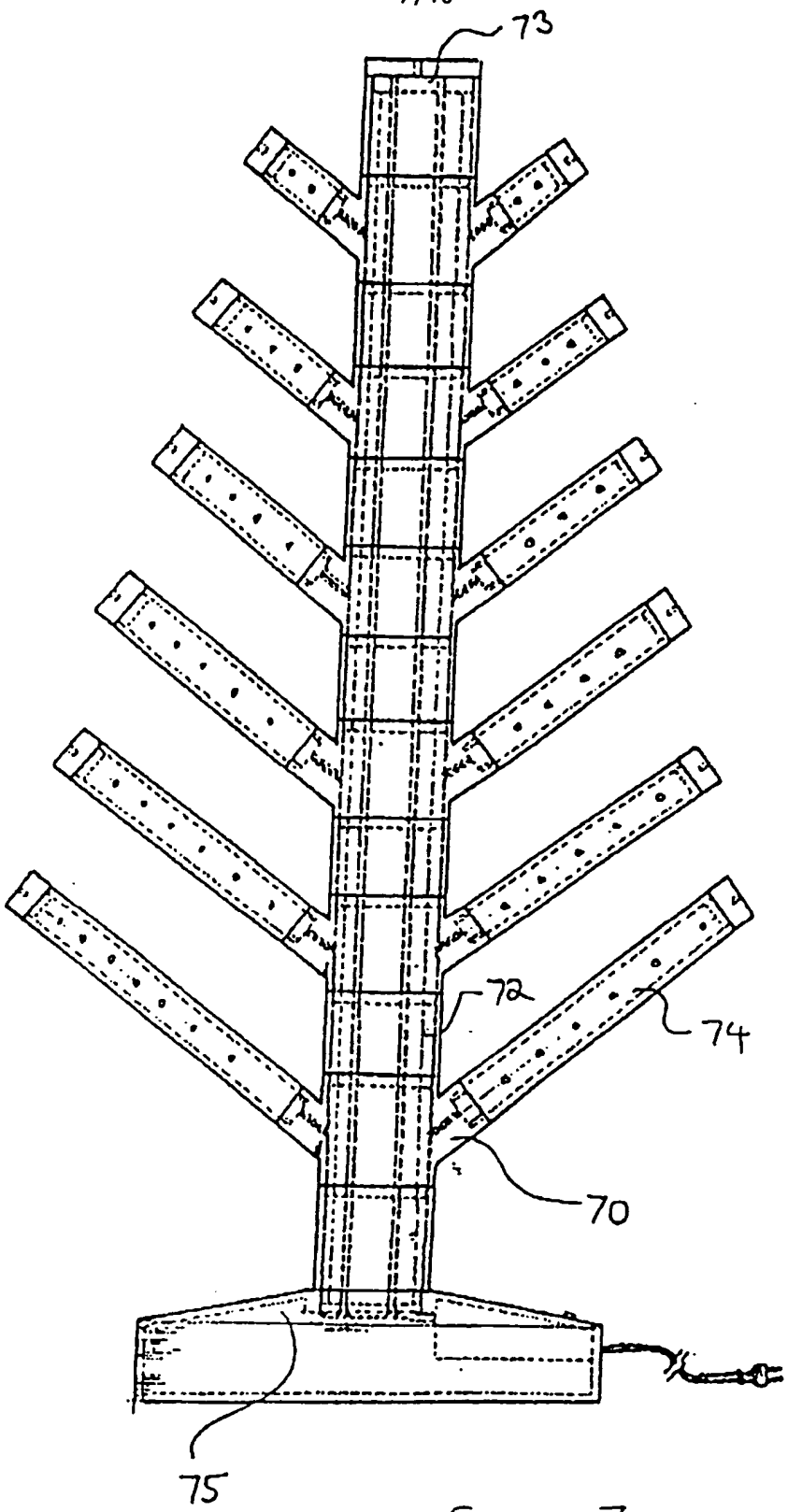

FIGURE 7

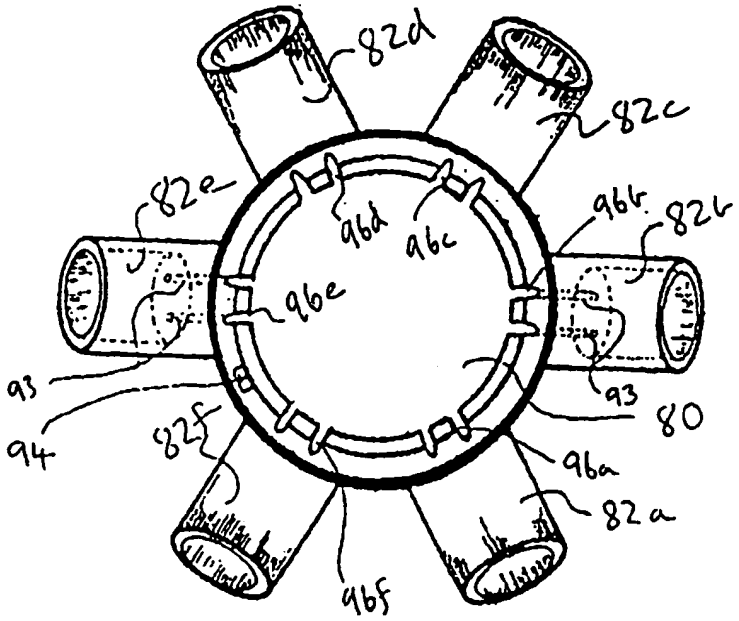

FIGURE 8a

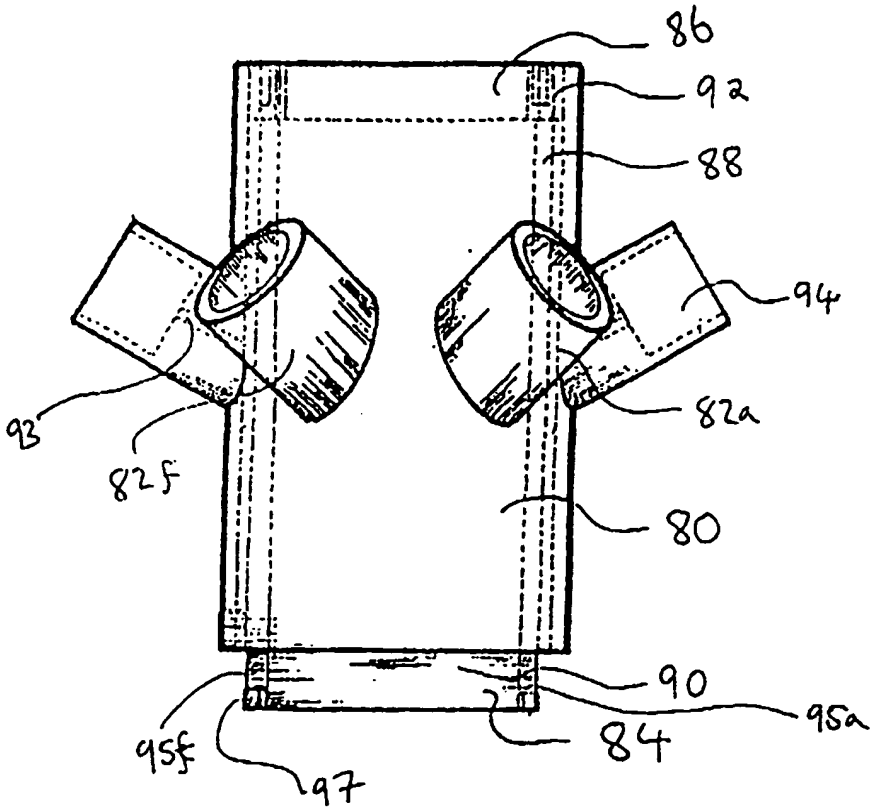

FIGURE 8b

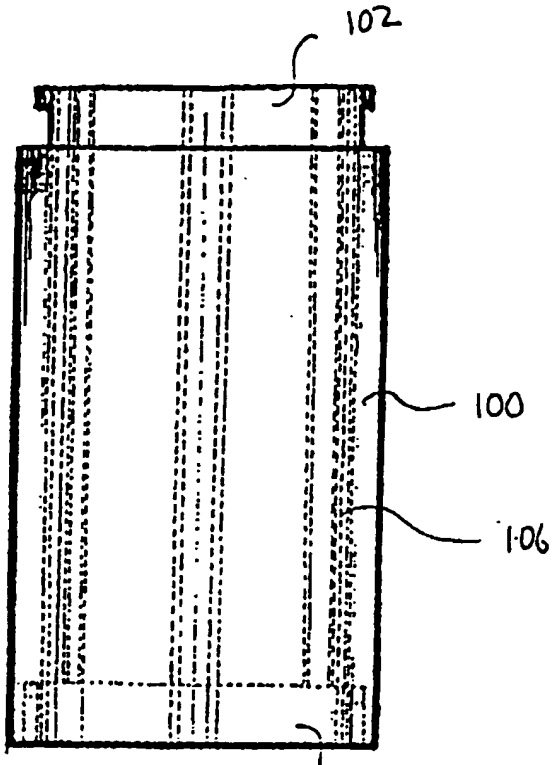

FIGURE 9a

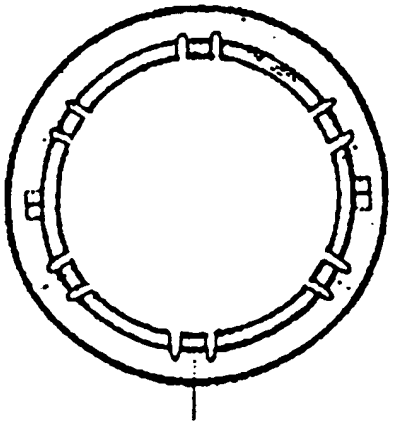

FIGURE 9b

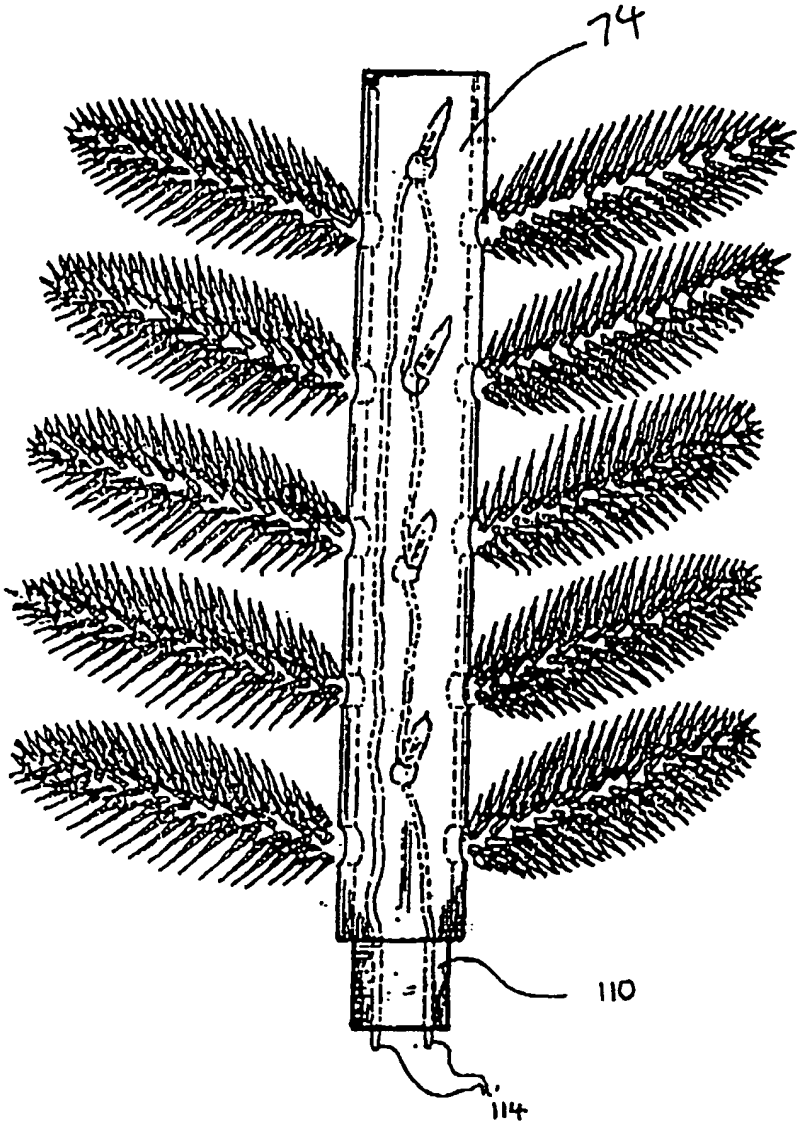

FIGURE 10

INTERNATIONAL SEARCH REPORT

In' ional Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A47G33/06 A47G33/16

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A47G A41G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,4 364 102 (HUPPERT VAUGHN P ET AL) 14 December 1982 see column 3, line 40 - column 6, line 36; figures ---	1-5,9,10
X	US,A,4 068 118 (CARRINGTON LEWIS R) 10 January 1978 see column 2, line 10 - column 4, line 48; figures ---	1,2,4,5, 9,10
X	US,A,4 858 086 (PIETRANTONIO MICHAEL ET AL) 15 August 1989 see column 4, line 9 - column 7, line 38; figures --- -/--	1-4,7,9, 10

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,4 060 722 (FOLEY ROBERT A) 29 November 1977 see column 3, line 25 - column 4, line 68; figures	1,2,9,10
A	GB,A,2 112 281 (SULLIVAN PETER ALBERT) 20 July 1983 see the whole document	3,5-12
A	US,A,2 188 529 (CORINA) 30 January 1940 see page 1, column 2, line 15 - page 2, column 1, line 65; figures	5-10
A	US,A,4 573 102 (NORWOOD DOROTHY) 25 February 1986 see column 2, line 41 - column 4, line 2; figures	5,6,10
A	GB,A,2 137 086 (FORTUNELITE IND COMPANY LIMITE) 3 October 1984	

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INTERNATIONAL SEARCH REPORT

Information on patent family members

In' ional Application No
PCT/GB 96/00443

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4364102	14-12-82	NONE	
US-A-4068118	10-01-78	NONE	
US-A-4858086	15-08-89	NONE	
US-A-4060722	29-11-77	NONE	
GB-A-2112281	20-07-83	NONE	
US-A-2188529	30-01-40	NONE	
US-A-4573102	25-02-86	NONE	
GB-A-2137086	03-10-84	NONE	